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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/754,277	01/05/2001	Takayoshi Sawayama	OKI.201	3046

7590 08/11/2004

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EXAMINER

ALEJANDRO MULERO, LUZ L

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AS

Office Action Summary	Application No. 09/754,277	Applicant(s) SAWAYAMA, TAKAYOSHI	
	Examiner Luz L. Alejandro	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2004.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 10-18 is/are pending in the application.
 4a) Of the above claim(s) 1-2 is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 10-18 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>0404</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted prior art in view of Komino et al., U.S. Patent 6,156,151 and Loan et al., U.S. Patent 6,296,711 B1.

Admitted prior art shows the invention substantially as claimed including a parallel plate etching apparatus having electrodes 6,7 wherein the upper electrode 6 comprises a cooling plate 2 having a plurality of gas supply holes 3 for supplying the gas, a gas introducing plate 4 having gas holes 3 for introducing the gas into a processing chamber 9, and a jig 5 for fixing said gas introducing plate 4 (see Figure 1 and page 1-line 15 to page 2-line 3 of applicant's specification).

Admitted prior art lacks anticipation of a first plasma detecting device provided inside of an upper electrode, wherein operation of said apparatus ceases if the pressure measured by said plasma device is below a predetermined level. Komino et al. discloses a plasma apparatus using a plasma detecting device comprising a pressure sensor 126 inside an upper electrode

(see fig. 1 and its description). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of the Admitted prior art so as to include the pressure sensor of Komino et al. because this will allow the operator of the apparatus to better optimize apparatus performance.

Admitted prior art and Komino et al. do not expressly disclose that the apparatus is adapted to cease operation if a pressure measured by the pressure sensor is lower than a predetermined value. Loan et al. discloses an apparatus using a pressure sensor 51 to control or monitor the process (see fig. 1B and col. 15-lines 61-65). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of the Admitted prior art modified by Komino et al. so as to cease operation if a pressure is lower than a predetermined value in order to efficiently and effectively control the process within the apparatus.

Furthermore, the Admitted prior art and Komino et al. but do not expressly disclose a second plasma detecting device, which measures a second pressure of a second plasma, provided within said dry etching apparatus in which a wafer is placed and a detector which measures a difference between the two pressures wherein, upon reaching a predetermined pressure differential, operation of the apparatus is terminated.

Loan et al. discloses an apparatus using pressure sensors 51 and 53 (see fig. 1B), whereby pressure sensor 51 is used to measure the pressure behind a gas introducing plate 72, and pressure sensor 53 is used to measure the pressure in

the processing chamber (see col. 13-lines 62-67 and fig. 1B). Furthermore, the difference between pressure sensors 51 and 53 is determined as shown in Figure 5G, to control or monitor the process (see col. 15-lines 61-65). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a plasma detecting device that measures pressure behind the gas introduction plate and in the chamber of the apparatus of the Admitted prior art modified by Komino et al., and incorporate means for determining the difference between the pressures detected by the pressure sensors and ceasing operation of the apparatus because this will allow for greater controllability over the apparatus (see col. 15-lines 64-65).

Additionally, it should be noted that Loan et al. discloses that pressure differential between the pressure sensors is measured and monitored (see col. 15, lines 61-65 and figs. 1B and 5G), which inherently will require a detecting means as claimed.

With respect to claims 13 and 17, note that although not explicitly stated, it would be inherent that the apparatus of Admitted prior art modified by Komino et al. and Loan et al. would have a pressure increase as the gas holes of the gas plate increase.

Double Patenting

Applicant is advised that should claim 13 be found allowable, claim 17 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof.

When two claims in an application are duplicates or else are so close in content

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that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Response to Arguments

Applicant's arguments with respect to claims 10-18 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luz L. Alejandro whose telephone number is 571-272-1430. The examiner can normally be reached on Monday to Thursday from 7:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills can be reached on 571-272-1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Luz L. Alejandro
Primary Examiner
Art Unit 1763

August 9, 2004